

Remarks

Claims 12-15 are pending and stand rejected in Examiner's Office Action dated December 15, 2006 under 35 U.S.C. 101 as claiming a series of abstract ideas. Applicant notes with appreciation the absence of any prior art rejection of these claims. Claim 12 is amended herein, and claims 13-15 are cancelled. For convenience of the Examiner, a clean copy of claim 12 as herein amended appears in the attached Appendix.

By way of background, the inventor herein is Dean Kamen, legendary inventor of the IBOT® stair-climbing wheelchair and the Segway® human transporter. He also founded in 1989 an organization called "For Inspiration and Recognition of Science and Technology," which has a web site at www.usfirst.org, and which works to inspire young people in science and technology. The organization's programs currently reach 132,000 students worldwide. One of these programs, which is the subject of the present application, includes a robotics competition for high school students, and this competition alone currently involves more than 1,300 teams of students, more than 32,500 in all, from 7 countries. The FIRST programs culminate in a championship competition so large that it fills the Atlanta Dome in Atlanta Georgia. Dignitaries addressing the crowd in this competition in 2005 and 2006 on the importance of their involvement in science and technology in the FIRST program include Jon W. Dudas, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, and in 2006 also his superior, Carlos M. Gutierrez, Secretary of Commerce.

Dean Kamen invented the scoring system, embodied in the claim herein, relatively recently in the history of the FIRST robotics competition, to further advance its goals of encouraging "coopertition" (as that term is used in this application) and gracious professionalism in the course of their activities in FIRST and, by extension, in life. He seeks the patent applied for herein, among other things, to "sue" others for "non-infringement"-----in other words to

encourage “coopertition” and gracious professionalism in other spheres while advancing the goals of FIRST.

The amendment to claim 12 preserves essential concepts already in the body of claim 12, while adding additional subject matter disclosed in the application. In particular, the use of alliances of teams in the competition has been added to the claim. For discussion of alliances, see the application, among other places, at page 2, line 10, and paragraph 6; page 3, paragraph 8; page 5, paragraph 14; and *passim* (occurring more than 140 times). The concept of “match” has been introduced into the body of the claim lieu of “heat” and is well supported by the application, including at page 3, paragraph 8 and *passim* (also occurring more than 140 times).

The preamble of claim 12 has been amended to emphasize that the claimed method is for “fostering” both “coopertition” and “gracious professionalism” among students. In other words, while the body of the claim still covers subject matter similar to that covered prior to the amendment, the amendment to the preamble has refocused the claim on what amounts to a teaching method. For support for “fostering” and “gracious professionalism”, see the application, among other places, at page 1, paragraph 2 (field of the invention); and pages 1-2, paragraph 5. The concept of creating coopertition was previously presented and appears in the title and on page 2, paragraph 5. For support for “students”, see the application at page 1, paragraphs 3-4 and *passim* (16 occurrences).

The present rejection contends that the subject matter herein is not statutory because the claims “merely recite a series of abstract ideas, which together form a mathematical algorithm per se. There is no practical application recited in the claims i.e. how would you evaluate cooperation: the robots are not used in a physical way and nothing is being made, the claim merely recites ‘providing a robot’ by performing the method there is no evidence of a concrete, tangible results [*sic*] and the is no physical transformation.” Office Action, page 2, par. 2. As a result the rejection contends that the requirements of *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) are not satisfied. *Id.*

This rejection is traversed, particularly with respect to claim 12 as presently amended. Using the Examiner’s same logic, the claims in *State Street* itself would be rejected. Let us

consider one of the claims at issue in *State Street*. The claim is to “A data processing system for managing a financial services configuration of a portfolio established as a partnership, each partner being one of a plurality of funds” 149 F.3d 1368 at 1371. To paraphrase the Examiner’s reasoning, the claimed data processing system is merely managing a financial services configuration of a portfolio. The data processing system is not used in a physical way. Nothing is being made. Indeed, the only output is “aggregate year-end income, expenses, and capital gain or loss for the portfolio and each of the funds.” See claim limitation (g). 149 F.3d 1368 at 1372. So using the Examiner’s logic, this is just a series of abstract ideas that together form a mathematical algorithm. Using the Examiner’s logic, there is no evidence of a concrete tangible result. Using the Examiner’s logic, there is no physical transformation.

The problem with the Examiner’s logic, however, is that the *State Street* case, on which he purports to rely, specifically holds the contrary:

“Today, we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces “a useful, concrete and tangible result”—a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.” 149 F.3d 1368 at 1372.

In the subject matter claimed herein, the “transformation of data,” here representing frequency of performance by robots of a physical task, leads to a score for each alliance, and produces an alliance of teams winning a match and a ranking of teams and therefore “constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’”—a winning team and a ranking of teams—a result accepted and relied upon by the competitors in the competition and used and accepted by others in evaluating the teams’ performance.

Unlike the *State Street* case, which “merely” (to borrow the Examiner’s words), uses a computer, the present claim requires the use of robots to perform repetitively a physical task, and the performance is rated via a scoring mechanism. It would indeed be bizarre to maintain that the presently claimed teaching method using robots operated by students is not statutory, since the context, unlike that of *State Street*, is not a computer method at all, but a teaching method using real physical objects, robots, operated on a playing field. In that respect, the present case is much closer to the older case of *Diamond v. Diehr*, 450 U.S. 175, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981), which was precedent for *State Street*. See 149 F.3d 1368 at 1373. In *Diamond v. Diehr*, a process for molding rubber was held to be statutory subject matter even though performance of an algorithm was part of the claimed subject matter. The Court held that the claims at issue matter did not cover all use of the equation at issue, but operate “only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process.” 450 U.S. 175 at 187.

Here, we are not claiming a scoring algorithm in the abstract, but rather a scoring mechanism that is anchored in the specific context of the robotics competition. The claim, by its very language, is inapplicable to any other context. Hence the claimed subject matter is statutory subject matter under *Diamond v. Diehr*. Moreover, the determination of winners and ranking of teams as required by the claim is quintessentially “a useful, concrete and tangible result” within the meaning of *State Street*.

An especially gratifying aspect of the claimed subject matter herein is that the “a useful, concrete and tangible result” in ranking teams is performed in a way that intrinsically fosters “gracious professionalism” and cooperation in the midst of competition—owing to the novel scoring system that is part of the claimed subject matter—and therefore accomplishes the purpose of the claimed method.

For the foregoing reasons, the rejection under 35 U.S.C. § 101 is improper and should be withdrawn. Accordingly, claim 12 is in condition for allowance. Reconsideration of the application and issuance of a notice of allowance are respectively requested.

To facilitate examination of the present application, applicant requests the courtesy of a personal interview with the Examiner and the Supervisory Patent Examiner to discuss the present application prior to action by the Examiner. Please telephone the undersigned so that such an interview may be scheduled.

Applicant believes that no extension of time is required for timely consideration of this response. In the event that an extension has been overlooked, applicant requests that deposit account number 19-4972 be charged for any fees that may be required for the timely consideration of this application.

Respectfully submitted,



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